In the Claims:

Please amend claims 7 and 13, a marked-up version of the amended claims is shown on Attachment D, and a clean version of all pending claims attached as Attachment C.

REMARKS

Responsive to the Office Action mailed July 31, 2002, for the above-identified patent application, the Examiner's comments and cited art have been studied.

Amendment of Specification

Paragraph 24 has been amended to correctly identify "diameter 50d" as shown in Figure 3 and also as described in paragraph 18. Applicant inadvertently referred to it as "diameter 48d" in original paragraph 24. Applicant submits that no new matter has been added.

35 U.S.C. § 102 Rejection

Claims 1, 2, 5-7, 9-17 and 19 are rejected under 35 U.S.C. § 102(e) as being anticipated by Klein, et al.

Claim 1 requires the step of positioning the mounting stud through the mounting hole. Claim 5 further requires the step of mounting the circuit board to the chassis by extending a mounting stud nose through the mounting hole. The Examiner states that Klein discloses the step of positioning a stud (10a) through a mounting hole (21). Applicants respectfully disagree! In fact, Klein teaches away from positioning any portion of the mounting stud through the mounting hole. Rather, Klein teaches that the mounting stud is located on only one side of the circuit board. *See* Klein, 2:66-3:1 ("The mounting boss is located on only one side of the circuit board when the mounting boss is engaged with the bracket."); 4:44-46 ("The mounting boss 10a is located on only one side of the motherboard 2a when the mounting boss is engaged with the bracket 9a."); 6:5-7 ("The mounting boss 10a is located on only one side of the motherboard 2b when the mounting boss is engaged with the bracket 9b."); 7:5-7 ("The mounting boss 10b is located on only one side of the motherboard 2c when the mounting boss is engaged with the bracket 9c."); and 8:35-37 ("The mounting boss 10a is located on only one side of the motherboard 2d when the mounting boss is engaged with the bracket 9d.").

Furthermore, Klein alternatively teaches inserting a screw through the mounting hole in the circuit board and into the first end of the mounting boss. *See* Klein, 5:44-45 ("The mounting boss 10a may include a hole 22 in the first end 19a for accepting a screw."); and 8:7-8 ("The mounting boss 10b may include a hole 22 in the first end 19b for accepting a screw.) The screw is not a mounting stud that is attached to the chassis.

Claim 2 requires that the ground clip is attached to an upper surface of the circuit board. Klein teaches the opposite. Klein teaches attaching the ground clip to the bottom side of the circuit board. *See* Klein, 5:52-54 ("Additionally, the screw will force the conductive surface 20a on the bottom side of the motherboard against the first end 19a of the mounting post 10a."); and 8:15-17 ("Additionally, the screw will force the conductive surface 20b on the bottom side of the motherboard against the first end 19b of the mounting post 10b.").

Claim 6 requires receiving a mounting stud nose in a biased clip opening. Klein does not teach or suggest a biased clip opening. Klein merely teaches that a notch may have chamfered edges at its mouth in order to more easily slidably engage with the mounting boss. *See* Klein, 4:57-60. There is nothing in Klein to suggest a biased clip opening.

Applicants respectfully submit that claims 1, 2, 5 and 6 are not taught or suggested by Klein for at least the reasons as explained above.

Claims 7 and 13 have been amended to include the feature of a generally circular upper body portion having a side opening adapted to spring open as the mounting stud nose enters the opening. Applicant disagrees that Klein discloses a generally circular upper body portion. The only circular portion in Klein is the slot. Furthermore, Klein does not teach or suggest a side opening adapted to spring open as the mounting stud nose enters the opening. Klein merely teaches that a notch may have chamfered edges at its mouth in order to more easily slidably engage with the mounting boss. *See* Klein, 4:57-60.

Claim 9 requires that a retentive lead is biased to provide a retentive force. The Examiner indicates that Klein discloses biasing (16). Applicants are unable to find this reference in Klein and would appreciate a more specific citation to this biasing reference.

Claims 12 and 17 include the feature of the retentive leads being substantially opposite the side opening. Conversely, Klein teaches retentive leads adjacent to the side opening.

Applicants respectfully submit that independent claims 7 and 13 and dependent claims 9-12 and 14-17, 19, respectively, are allowable over the cited references for at least the reasons described above.

35 U.S.C. § 103 Rejections

Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Klein, et al.

Applicants submit that claims 3 and 4 are allowable for at least the reasons described above with respect to claim 1.

Claims 8 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Klein, et al. in view of Sampson.

Applicants submit that claims 8 and 18 are allowable for at least the reasons described above with respect to claims 7 and 13.

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Klein, et al. in view of Delpech, et al. The Examiner indicates that Klein does not have outwardly flared ends that are allowed to flex outwardly to receive the upper nose of the mounting stud, but that Delpech discloses flexing ends of a clip.

Applicants submit that it would not have been obvious to make the claimed combination without using improper hindsight. For the reasons previously stated, Klein did not teach or

suggest a side opening adapted to spring open as the upper nose enters the opening. Thus, Klein provides no motivation to add outwardly flared ends to the ground clip.

Applicants respectfully submit that claims 3, 4, 8, 18 and 20 are allowable over the cited references.

CONCLUSION

For the foregoing reasons, Applicants submit that the application stands in condition for allowance. Withdrawal of the rejections and allowance of the claims is respectfully requested.

Respectfully submitted,

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ATTACHMENT A

Marked-Up Version Of Specification Changes (as of 10/31/02)

[0024] Preferably, the inner diameter of the ground clip's circular-shaped upper body portion 22 is smaller than the diameter [48d] 50d of the mounting stud nose 48. As the PCB 10 reaches its final position, the upper body portion 22 of the ground clip 20 engages the nose 48 of the mounting stud 40, springs open, then returns to a position that partially surrounds and makes firm contact with the mounting stud nose 48 as shown in Figs. 7 and 8. The firm contact of the ground clip 20 around the mounting stud nose 48 provides the electrical ground between that portion of the PCB 10 and the chassis C.

ATTACHMENT B

Clean Version Of Specification Changes (as of 10/31/02)

[0024] Preferably, the inner diameter of the ground clip's circular-shaped upper body portion 22 is smaller than the diameter 50d of the mounting stud nose 48. As the PCB 10 reaches its final position, the upper body portion 22 of the ground clip 20 engages the nose 48 of the mounting stud 40, springs open, then returns to a position that partially surrounds and makes firm contact with the mounting stud nose 48 as shown in Figs. 7 and 8. The firm contact of the ground clip 20 around the mounting stud nose 48 provides the electrical ground between that portion of the PCB 10 and the chassis C.

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ATTACHMENT C

Clean Version of All Pending Claims (as of 10/31/02)

1. A method of electrically grounding a circuit board to a chassis comprising the steps of:

attaching an electrically conducting mounting stud to the chassis;
attaching a ground clip adjacent a mounting hole on the circuit board;
positioning the mounting stud through the mounting hole; and
positively engaging the ground clip with the mounting stud.

2. The method of claim 1, wherein the ground clip is attached to an upper surface of the circuit board.

3. The method of claim 1, wherein the step of attaching a ground clip includes soldering the ground clip to the circuit board.

4. The method of claim 3, wherein the step of attaching a ground clip includes extending ground clip leads through lead holes in the circuit board.

5. The method of claim 1, further comprising the step of mounting the circuit board to the chassis by extending a mounting stud nose through the mounting hole.

6. The method of claim 1, wherein the step of positively engaging the ground clip with the mounting stud includes receiving a mounting stud nose in a biased clip opening.

7. (Amended Once) A ground clip apparatus adapted to engage a mounting stud nose for electrically grounding a circuit board to a chassis, the apparatus comprising:

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a generally circular upper body portion having a side opening adapted to spring open as the mounting stud nose enters the opening; and

a plurality of retentive leads extending from the upper body portion, the plurality of retentive leads adapted for insertion through holes in the circuit board.

8. The apparatus of claim 7, further comprising a plurality of stanchions extending from the lower end of the upper body portion.

9. The apparatus of claim 7, wherein each retentive lead is biased to provide a retention force.

10. The apparatus of claim 9, wherein each retentive lead includes a teat.

11. The apparatus of claim 7, wherein the upper body portion includes outwardly flared ends adjacent the side opening.

12. The apparatus of claim 7, wherein the plurality of retentive leads are substantially opposite the side opening.

13. (Amended Once) In a printed circuit board adapted for mounting in a chassis having a plurality of mounting studs having an upper nose, the printed circuit board having a plurality of mounting holes adapted to receive the upper nose of the mounting studs, the improvement comprising:

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a plurality of ground clips, each ground clip having a generally circular upper body portion with a side opening adapted to spring open as the upper nose enters the opening, and a plurality of retentive leads extending from the upper body portion, each ground clip connected to the printed circuit board around a portion of a mounting hole,

wherein the generally circular upper body portion is in contact with the upper nose to provide electrical grounding of the printed circuit board to the chassis.

14. The improvement of claim 13, wherein each ground clip is positioned so that the side opening faces the mounting hole.

15. The improvement of claim 13, wherein the printed circuit board includes a plurality of lead holes for each ground clip, the plurality of lead holes corresponding to the plurality of retentive leads of each ground clip, the retentive leads inserted into the lead holes for attaching each ground clip to the printed circuit board.

16. The improvement of claim 15, wherein each retentive lead is biased to provide a retention force.

17. The improvement of claim 15, wherein the plurality of retentive leads are substantially opposite the side opening.

18. The improvement of claim 13, further comprising a plurality of stanchions extending from the lower end of the upper body portion.

19. The improvement of claim 13, wherein the upper body portion includes outwardly flared ends adjacent the side opening.

20. The improvement of claim 19, wherein the outwardly flared ends are allowed to flex outwardly to receive the upper nose of the mounting stud.

ATTACHMENT D

Marked-Up Version of Amended Claims (as of 10/31/02)

7. (Amended Once) A ground clip apparatus adapted to engage a mounting stud nose for electrically grounding a circuit board to a chassis, the apparatus comprising:

a generally circular upper body portion having a side opening adapted to spring open as the mounting stud nose enters the opening; and

a plurality of retentive leads extending from the upper body portion, the plurality of retentive leads adapted for insertion through holes in the circuit board.

13. (Amended Once) In a printed circuit board adapted for mounting in a chassis having a plurality of mounting studs having an upper nose, the printed circuit board having a plurality of mounting holes adapted to receive the upper nose of the mounting studs, the improvement comprising:

a plurality of ground clips, each ground clip having a generally circular upper body portion with a side opening adapted to spring open as the upper nose enters the opening, and a plurality of retentive leads extending from the upper body portion, each ground clip connected to the printed circuit board around a portion of a mounting hole,

wherein the generally circular upper body portion is in contact with the upper nose to provide electrical grounding of the printed circuit board to the chassis.